

**IN THE CLAIMS**

1. (Cancelled)
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13. (Cancelled)
14. (Cancelled)

15. (Currently Amended) A two-dimensional array of Lead-Salt detector elements monolithically formed on an integrated circuit, the system comprising:

an integrated circuit comprising a passivation layer and a plurality of electrical contacts, the passivation layer having vias to the electrical contacts;

a ~~delineated, sensitized~~ Lead-Salt layer formed deposited upon the passivation layer, wherein sensitized, delineations are formed to provide the delineations forming a plurality of detector elements; and

electrical couplers formed between the electrical contacts and the detector elements.

16. (Original) The system of Claim 15, wherein the passivation layer comprises Silicon Dioxide.

17. (Original) The system of Claim 15, wherein the electrical couplers comprise Gold.

18. (Original) The system of Claim 15, wherein the pitch of the detector elements is less than approximately thirty microns.

19. (Original) The system of Claim 15, further comprising a conductive material upon the passivation layer and underlying part of the Lead-Salt layer, the conductive material forming a plurality of detector element contacts and a common grid for the detector elements, wherein the electrical couplers between the electrical contacts and the detector elements comprise electrical couplers between the electrical contacts and the detector element contacts.

20. (Original) The system of Claim 19, wherein the conductive material comprises Titanium-Gold.

21. (Original) The system of Claim 19, wherein the electrical couplers overlay at least part of the detector element contacts.

22. (Original) The system of Claim 19, wherein the electrical couplers overlay at least part of the detector element contacts and the detector elements.

23. (Original) The system of Claim 15, wherein the electrical couplers overlay at least part of the detector elements.

24. (Original) The system of Claim 15, wherein the Lead-Salt comprises Lead Selenide.

25. (Currently Amended) ~~The system of Claim 15, wherein the passivation layer is texturized.~~ A two-dimensional array of Lead-Salt detector elements monolithically formed on an integrated circuit, the system comprising:

an integrated circuit comprising a texturized passivation layer and a plurality of electrical contacts, the passivation layer having vias to the electrical contacts;

a delineated, sensitized Lead-Salt layer formed upon the passivation layer, the delineations forming a plurality of detector elements; and

electrical couplers formed between the electrical contacts and the detector elements.

26. (Currently Amended) ~~The system of Claim 15, further comprising a textured coating between the passivation layer and the Lead-Salt layer.~~ A two-dimensional array of Lead-Salt detector elements monolithically formed on an integrated circuit, the system comprising:

an integrated circuit comprising a passivation layer and a plurality of electrical contacts, the passivation layer having vias to the electrical contacts;

a textured coating upon the passivation layer;

a delineated, sensitized Lead-Salt layer formed upon the textured coating, the delineations forming a plurality of detector elements; and

electrical couplers formed between the electrical contacts and the detector elements.

27. (Original) The system of Claim 15, further comprising a passivation layer over the Lead-Salt layer.

28. (Original) A two-dimensional array of Lead-Salt detector elements monolithically mounted on an integrated circuit, the system comprising:

an integrated circuit comprising a passivation layer covering a plurality of electrical contacts, the passivation layer having vias to the electrical contacts;;

a conductive material upon the passivation layer, the conductive material forming a plurality of detector element contacts and a common grid for the detector;

a delineated, sensitized Lead-Sulfide layer formed upon the passivation layer and part of the conductive material, the delineations forming a plurality of detector elements having a pitch of less than approximately thirty microns; and

electrical couplers formed between the electrical contacts and the detector element contacts.

29. (Original) The system of Claim 28, wherein the electrical couplers overlay the detector element contacts and the detector elements.

30. (Original) A two-dimensional array of Lead-Salt detector elements monolithically mounted on an integrated circuit, the system comprising:

an integrated circuit comprising a passivation layer covering a plurality of electrical contacts, the passivation layer having vias to the electrical contacts;

a textured coating upon the passivation layer;

a delineated, sensitized Lead-Selenide layer formed upon the textured coating, the delineations forming a plurality of detector elements having a pitch of less than approximately thirty microns; and

electrical couplers formed between the electrical contacts and the detector elements.

31. (Currently Amended) An infrared sensor comprising:  
optics; and

a two-dimensional array of Lead-Salt detector elements monolithically formed on an integrated circuit, the system comprising:

an integrated circuit comprising a passivation layer and a plurality of electrical contacts, the passivation layer having vias to the electrical contacts;

a ~~delineated, sensitized~~ Lead-Salt layer ~~formed~~ deposited upon the passivation layer, wherein sensitized, delineations are formed to provide the delineations forming a plurality of detector elements; and

electrical couplers between the electrical contacts and the detector elements.